SECTION 7

EVALUATION OF OE RESPONSE ACTION ALTERNATIVES

7.1 INTRODUCTION

7.1.1 As part of the EE/CA process, each of the four alternatives identified in Section 6 must be analyzed and screened against the three general categories of effectiveness, implementability, and cost to ensure that they meet each of the criteria within the three categories. This screening will be performed for all four alternatives for the 312-acre parcel. The purpose of this screening is to ensure that only viable alternatives are ranked against each other in Section 8 of this document. Once this screening has been completed, the remaining alternatives will be compared against each other to determine the best response action for the site.

7.1.2 The effectiveness of an alternative refers to its ability to meet the clean-up objective within the scope of the response action. The effectiveness category is divided into four evaluation criteria. These include Overall Protection of Public Safety and Human Environment; Compliance with ARARs; Long-Term Effectiveness; and Short-Term Effectiveness.

7.1.3 The implementability category includes the technical and administrative feasibility of implementing an alternative, the availability of various services and materials required during its implementation, and the acceptance local residents and agencies have expressed towards the various alternatives. The implementability category is divided into six evaluation criteria including: Technical Feasibility; Administrative Feasibility; Availability of Services and Materials; Property Owner Acceptance; Local Agency Acceptance; and Community Acceptance.

7.1.4 Finally, each alternative is evaluated to determine it's projected overall implementation cost. Included in the cost calculation is an estimate as to the amount of time that will be necessary to complete the proposed alternative. Each of the evaluation criteria introduced above will be discussed in greater detail in the following paragraphs.

7.2 EFFECTIVENESS

7.2.1 Overall Protection of Public Safety and Human Environment: Alternatives are evaluated under this criterion on how well they achieve and maintain protection of public safety and human environment.

7.2.2 Compliance with ARARs: Evaluation under this criterion ensures that all requirements can be met without regulatory problems. The assessment may also include the TBC criteria. The applications of ARARs for each alternative will primarily focus on what ARARs apply as well as how they will be met.

7.2.3 Long-Term Effectiveness: This criterion measures how an alternative maintains the protection of human health and the environment after the response objective has been met. The analysis focuses on:

?? the permanence of the response action alternative;
?? the magnitude of residual risk following completion of the response action; and
?? the adequacy and reliability of controls if any, used to manage the treated residuals or untreated wastes that remain at the site following the response action.

7.2.4 Short-Term Effectiveness: This criterion addresses the effects of an alternative during the implementation phase. Alternatives are evaluated for their effects on human health and the environment prior to the response objectives being met. More specifically, each alternative will be examined for:

?? protection of the community and workers during the response action;
?? adverse impacts resulting from construction and implementation; and
?? the time required to meet the response objectives.

7.3 IMPLEMENTABILITY

7.3.1 Technical Feasibility: This criterion evaluates the ease of implementing a specific alternative. The analysis of the technical feasibility for each course of action focuses on difficulties in:

?? the operation and construction of the response action;
?? the reliability of the response action in relation to implementation; and
?? the need and ease of conducting future remedial actions/requirements following the initial undertaking.

7.3.2 Administrative Feasibility: This criterion focuses on the planning for a course of action. The evaluation of this criterion considers difficulties in:

?? obtaining permits applicable to a proposed alternative;
?? coordinating services needed to carry out an alternative; and
?? arranging the delivery of services in a timely manner.

7.3.3 Availability of Services and Materials: This criterion primarily deals with the availability of services needed to carry out an alternative. Two issues are of primary importance under this criterion:

?? can the services and materials be delivered conveniently; and
?? are the quantities needed to implement the response action available in a timely manner.

7.3.4 Property Owner Acceptance: Each of the alternatives will have a varying degree of impact on the future use of the 312-acre parcel. As a result, each alternative is rated based on the degree of acceptance expressed by the property owner.

7.3.5 Local Agency Acceptance: Each alternative is rated based on the degree of acceptance expressed by local Jefferson County government agencies towards the various alternatives examined in the analysis.

7.3.6 Community Acceptance: Each alternative is rated based on the degree of acceptance expressed by local community members toward each of the response actions that are being analyzed. This criterion will be evaluated based on input received from the JPG RAB.

7.4 COST

As the scope of work for each alternative is developed, an order of magnitude cost estimate is calculated for costs associated with the implementation of each response action. These costs will include the direct and indirect capital costs incurred in implementing the response action. As part of this assessment, a time frame for completion of each of the proposed alternatives is also developed.

7.5 APPLICATION OF THE EVALUATION CRITERIA BY ALTERNATIVE

7.5.1 Alternative 1: No DOD Action Indicated

Effectiveness: For the 312-acre parcel, the NDAI alternative would not provide for the overall protection of public safety and human environment. During the intrusive investigation conducted at the site, one UXO item was discovered near Tokyo Road adjacent to the former airfield. A number of additional UXO items were recovered during the investigation of the former airfield just east of Tokyo Road. As this alternative fails the Effectiveness category, no further analysis of this alternative will be performed.

7.5.2 Alternative 2: Institutional Controls

7.5.2.1 Effectiveness: For the 312-acre parcel, the Institutional Controls alternative can provide for the overall protection of public safety and human environment, comply with ARARs, and provide for both the long-term and short-term effectiveness. The implementation of the Institutional Controls alternative can provide sufficient risk reduction to allow this alternative to be effective.

7.5.2.2 Implementability: The Institutional Controls alternative as defined in Section 6 is feasible from both the technical and administrative aspects and the materials and services to implement this alternative are both readily available. The JPG Base Transition Coordinator, who was interviewed during the Institutional Analysis for this project, indicated that he would like to see the most unrestricted use of the property when it is sold. OE clearance alternatives will provide a greater reduction in residual OE risk than institutional controls and therefore generally provide for a less restricted use of the property. The Institutional Controls alternative, however, will be retained for a more complete comparison.

7.5.2.3 Cost: The cost to perform this alternative is summarized in Table 7.1. This cost includes annual maintenance costs for a period of five years. It will take approximately three months to prepare and distribute the printed material for this alternative. Additional details on how the costs were derived and the assumptions used in preparing the cost estimate are included in Appendix F.

7.5.3 Alternative 3: Surface Clearance of OE

7.5.3.1 Effectiveness: For this alternative, qualified UXO clearance personnel would perform a one-time surface clearance of OE to a depth of six inches below ground surface. If the source of the magnetic reading is not identified within the first six inches below the ground surface, the excavation will cease and the location will be restored to its original condition. The UXO item recovered during the field investigation was located approximately 2 inches (0.05 meters) below the surface. An OE clearance to a depth of six inches would therefore address the risk from similarly buried items. This alternative provides for the overall protection of public safety and human environment and would be effective in both the long term and the short term. In order to perform this alternative, brush and undergrowth on the wooded site would need to be cleared. Although the site has not been delineated as a jurisdictional wetland, it does exhibit many wetland characteristics. Therefore, special consideration may be required during the implementation of this alternative in order to comply with ARARs that address activities within wetlands or areas exhibiting the characteristics of a wetland.

7.5.3.2 Implementability: This alternative is both technically and administratively feasible and the materials and services necessary to implement this alternative are readily available. The JPG Base Transition Coordinator, who was interviewed during the Institutional Analysis for this project, indicated that he would like to see the most unrestricted use of the property when it is sold. Input received from the local community indicates that they would be agreeable to an OE surface clearance of the property. This alternative will increase the usability of the property by reducing the residual UXO risk. Therefore, this alternative has been retained for the comparative analysis of potential response action alternatives.

TABLE 7.1
COST SUMMARY OF REMAINING RESPONSE ACTION ALTERNATIVES

Item	Alternative 2 Institutional Controls	Alternative 3 Surface Clearance	Alternative 4 Clearance to Depth
Facility Support	$2,000	$10,000	$10,000
USAESCH Support	$6,000	$30,000	$30,000
Printed Media	$36,000	$0	$0
Ad hoc committee	$2,000	$0	$0
Classroom Education	$10,000	$0	$0
Visual Media	$101,000	$0	$0
Exhibits/Displays	$10,000	$0	$0
Website	$2,000	$0	$0
Annual Maintenance Costs (five years)	$60,000	$0	$0
Site Visit	$0	$14,000	$14,000
Work Plan	$0	$36,000	$43,000
Mobilization	$0	$48,000	$48,000
Project Management	$0	$425,000	$462,000
Land Survey Control/Grid Establishment	$0	$103,000	$119,000
Area Preparation/Brush Cutting	$0	$244,000	$244,000
Surface Clearance/Geophysical Survey	$0	$263,000	$347,000
Subsurface Clearance	$0	$101,000	$295,000
OE Disposition	$0	$53,000	$60,000
AEDA Certification/Disposition	$0	$19,000	$19,000
Demobilization	$0	$35,000	$35,000
Final Report	$0	$33,000	$36,000
TOTAL	**$229,000**	**$1,414,000**	**$1,763,000**

Note: See Appendix F for detailed cost estimates and a description of assumptions used.

7.5.3.3 Cost: The cost to perform this alternative is summarized in Table 7.1. This alternative will take approximately eleven months to complete (including Work Plan and Final Report preparation and review). Additional details on how the costs were derived and the assumptions used in preparing the cost estimate are included in Appendix F.

7.5.4 Alternative 4: Surface and Subsurface Clearance of OE to Depth

7.5.4.1 Effectiveness: For this alternative, qualified UXO clearance personnel would perform a one-time surface and subsurface clearance of OE to depth. This clearance activity would address not only those OE items currently on the surface but also those in the subsurface of the 312-acre parcel. This alternative provides for the overall protection of public safety and human environment and would be effective in both the long term and short term. In order to perform this alternative, brush and undergrowth on the wooded site would need to be cleared. Although the site has not been delineated as a jurisdictional wetland, it does exhibit many wetland characteristics. Therefore, special consideration may be required during the implementation of this alternative in order to comply with ARARs that address activities within wetlands or areas exhibiting the characteristics of a wetland.

7.5.4.2 Implementability: This alternative is both technically and administratively feasible and the materials and services necessary to implement this alternative are readily available. The JPG Base Transition Coordinator, who was interviewed during the Institutional Analysis for this project, indicated that he would like to see the most unrestricted use of the property when it is sold. Input received from the local community indicates that this is not their preferred alternative, although they would not be completely against such an approach. This alternative will increase the usability of the property by reducing the residual UXO risk. Therefore, this alternative has been retained for the comparative analysis of potential response action alternatives.

7.5.4.3 Cost: The cost to perform this alternative is summarized in Table 7.1. This alternative will take approximately 14 months to complete (including Work Plan and Final Report preparation and review). Additional details on how the costs were derived and the assumptions used in preparing the cost estimate are included in Appendix F.

7.6 SUMMARY OF REMAINING ALTERNATIVES

The remaining response alternatives for the 312-acre parcel include:

- ?? Alternative 2 - Institutional Controls;
- ?? Alternative 3 - Surface Clearance of OE; and
- ?? Alternative 4 - Surface and Subsurface Clearance of OE to Depth.

These alternatives will be evaluated against each other in Section 8 of this document to determine the best alternative.